NAVY TRAINING SYSTEM PLAN

FOR THE

AN/ALQ-220 ORGANIC AIRBORNE AND SURFACE INFLUENCE SWEEP

N75-NTSP-P-30-0302/I

SEPTEMBER 2003

AN/ALQ-220 ORGANIC AIRBORNE AND SURFACE INFLUENCE SWEEP

EXECUTIVE SUMMARY

This Initial Navy Training System Plan for the AN/ALQ-220, Organic Airborne And Surface Influence Sweep (OASIS) was developed using the Training Planning Process Methodology. This document provides an early estimate of manpower, personnel, and training requirements to support the employment concepts currently being considered. It also contains appropriate data required to make accurate decisions and assessments concerning manpower and training alternatives for the OASIS.

The OASIS will be deployed from the MH-60S helicopter and will be used for high-speed magnetic, acoustic, and magnetic/acoustic influence minesweeping in waters with a suspected mine threat. The magnetic/acoustic influence capability will be combined in a single Towed Body. The OASIS will provide an Organic Airborne Mine Countermeasures capability to the Carrier Battle Group and Amphibious Ready Group and provide an improved high-speed magnetic/acoustic minesweeping capability to the dedicated Airborne Mine Countermeasures (AMCM) Forces. This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Operating Area whenever time available for mine clearance is limited or when conditions do not favor mine-hunting. The OASIS is currently in Milestone B, System Development and Demonstration phase of the Defense Acquisition System. The Acquisition Category (ACAT) assigned is ACAT II. The Milestone C Decision Point is planned for third quarter Fiscal Year (FY) 05. Initial Operational Capability is currently scheduled for second quarter FY08.

The maintenance concept for the OASIS will be based on the three levels of maintenance, Organizational (O-Level), Intermediate (I-Level), and Depot (D-Level) as stated in the Naval Aviation Maintenance Program, Chief of Naval Operations Instruction 4790.2H. It is expected that Aviation Electronics Technicians (AT) Navy Enlisted Classification (NEC) code 83XX assigned to Helicopter Combat Support (HC) and Helicopter Mine Countermeasures (HM) squadrons, as MH-60S AMCM Systems Maintenance Technicians Organizational and Intermediate Level will perform O-Level and I-Level maintenance on the OASIS. These billets do not currently exist in the HC squadrons and will have to be established. AT O-Level and I-Level MH-53E AMCM systems maintenance billets currently exist in the HM squadrons, it is expected that these will convert to MH-60S AMCM systems maintenance billets to support the HM community's transition to the MH-60S. A new NEC code 83XX will be required to identify MH-60S AMCM systems maintenance personnel. Aviation Ordnancemen (AO) NEC code 8378 that will be assigned to the HC squadrons will perform aircraft mission configuration and certification. AO maintenance billets do not currently exist in the HC deployable squadrons and will have to be established. AOs NEC code 8378 that will be assigned to the HM squadrons Aircraft Maintenance Department Work Center (W/C) 230 will perform aircraft mission configuration and certification. Additionally ATs NEC code 83XX, MH-60S AMCM Systems Maintenance Technicians Organizational and Intermediate Level will be assigned to W/C 230 to

provide maintenance support for the OASIS. Factory Technical Representatives will provide support when needed. It is expected that the manufacturer will perform D-Level maintenance.

Operations Specialists (OS) that are assigned to the HM squadrons conduct AMCM Mission Planning, Post Mission Analysis, and operate AMCM Command, Control, Communications, Computers, and Intelligence (C4I) systems. It is expected that this manning concept will not change. Currently these OSs receive no AMCM specific follow-on training or NEC. A Stand-Alone course titled Airborne Mine Countermeasures MCM Planning, Post Mission Analysis, MCM Evaluation Course is currently proposed in the AN/AQS-20A Initial NTSP. Additionally, an On The Job Training awardable NEC code that will identify their AMCM specific qualifications is planned. Personnel requirements for conducting Mission Planning, Post Mission Analysis, and the operation of AMCM C4I systems for the HC squadrons are currently being evaluated.

The OASIS mission will require an operator manning of four: pilot, co-pilot, and two enlisted aircrewmen. It is expected that the OASIS will require no additional operator billets above those identified in current HC and HM Activity Manpower Documents. It is anticipated additional O-Level and I-Level maintenance billets within the HC squadrons may be required to support the OASIS and additional MH-60S Airborne Mine Countermeasures Systems. Additional instructor billets may be required to support OASIS follow-on training requirements. A Manpower Estimate Report (MER) is currently under development by Commander Naval Air Systems Command (Code AIR 3.2.6) Patuxent River, Maryland. Results of the MER will be identified in future updates of this NTSP.

Follow-on maintenance training for mission configuration personnel will be conducted at Maintenance Training Unit (MTU) –1044, Naval Station (NS) Norfolk, Virginia and MTU-1022, Naval Air Station (NAS) North Island, California. Follow-on OASIS maintenance training for the AMCM systems technicians will be conducted at MTU-1044, NS Norfolk and MTU 1022, NAS North Island**.** It is anticipated operator training will be conducted at the Fleet Replacement Squadrons located at HC-3 NAS North Island and HC-2 NS Norfolk. Follow-on training for squadron tactics (Mission Planning/Post Mission Analysis) personnel is under review and will be included in future updates to this NTSP.

The OASIS is one of five AMCM sensor/weapon systems being developed for deployment aboard the MH-60S aircraft. The additional sensor/weapon systems are the Airborne Laser Mine Detection System (ALMDS), AN/AQS-20A Sonar Mine Detecting Set, Airborne Mine Neutralization System (AMNS), and the Rapid Airborne Mine Clearance System (RAMICS). Individual NTSPs are in development for each of these systems.

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LIST OF ACRONYMS

ACAT	Acquisition Category
AE	Aviation Electrician's Mate
AIMD	Aircraft Intermediate Maintenance Department
ALSP	Acquisition Logistics Support Plan
AMCM	Airborne Mine Countermeasures
AMTCS	Aviation Maintenance Training Continuum System
AO	Aviation Ordnanceman
APO	Aviation Petty Officer
ARG	Amphibious Ready Group
AT	Aviation Electronics Technician
BIT	Built-In-Test
C4I	Command, Control, Communications, Computers, and Intelligence
CC	Common Console
CNO	Chief of Naval Operations
CSE	Common Support Equipment
CSTRS	Carriage, Stream, Tow, and Recovery System
CVBG	Carrier Battle Group
D-Level	Depot Level
DT	Developmental Test
DT&E	Developmental Test and Evaluation
FRS	Fleet Replacement Squadron
FY	Fiscal Year
HC	Helicopter Combat Support
HM	Helicopter Mine Countermeasures
HSI	Human Systems Integration
I-Level	Intermediate Level
ICW	Interactive Courseware
IETM	Interactive Electronic Technical Manual
ILTE	Intermediate Level Test Equipment
IOC	Initial Operational Capability

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LIST OF ACRONYMS

LORA	Level of Repair Analysis
MEDAL	Mine Warfare Environmental Decision Aid Library
MER	Manpower Estimate Report
MTU	Maintenance Training Unit
NAMP	Naval Aviation Maintenance Program
NAMTRAU	Naval Air Maintenance Training Unit
NAS	Naval Air Station
NEC	Navy Enlisted Classification
NS	Naval Station
NTSP	Navy Training System Plan
O-Level	Organizational Level
OASIS	Organic Airborne and Surface Influence Sweep
OJT	On-the-Job Training
OPEVAL	Operational Evaluation
OPNAV	Office of the Chief of Naval Operations
OPNAVINST	Office of the Chief of Naval Operations Instruction
OPO	OPNAV Principal Official
OS	Operations Specialist
OT	Operational Test
PEO LMW	Program Executive Officer Littoral and Mine Warfare
PIDS	Prime Item Development Specification
PMA	Program Manager, Air
PMS	Program Manager, Surface
PSE	Peculiar Support Equipment
RFOU	Ready For Operational Use
RFT	Ready For Training
SD&D	System Development and Demonstration
SRA	Shop Replaceable Assemblies
TBD	To Be Determined
TD	Training Device
TECHEVAL	Technical Evaluation

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LIST OF ACRONYMS

TTE	Technical Training Equipment
W/C	Work Center
WRA	Weapon Replaceable Assembly

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PREFACE

This Initial Navy Training System Plan (NTSP) is an early look at the AN/ALQ-220, Organic Airborne and Surface Influence Sweep (OASIS) program. This is the first iteration of the Initial NTSP for the OASIS program. The data contained in this iteration does not represent the official Manpower Personnel and Training requirements of the program. This document explores the various employment and support alternatives currently under consideration. Since it is relatively early in the acquisition process, some definitive data was unavailable for inclusion in this version. This NTSP is a product of the Training Planning Process Methodology, as outlined in Office of the Chief of Naval Operations (OPNAV) publication P-751-3-9-97.

PART I - TECHNICAL PROGRAM DATA

A. NOMENCLATURE-TITLE-PROGRAM

1. Nomenclature-Title-Acronym. AN/ALQ-220, Organic Airborne and Surface Influence Sweep, (OASIS).

2. Program Element. 64373N.

B. SECURITY CLASSIFICATION.

1. System Characteristics ..... Secret
2. Capabilities ..... Secret
3. Functions ..... Unclassified

C. MANPOWER, PERSONNEL, AND TRAINING PRINCIPALS

OPNAV Principal Official (OPO) Program Sponsor ..... CNO (N752)

OPO Resource Sponsor..... CNO (N759)

Developing Agency ..... PEO LMW (PMS210)

Training Agency ..... COMLANTFLT
COMPACFLT
NETC

Training Support Agency..... NAVAIR (PMA205)

Manpower and Personnel Mission Sponsor..... CNO (N12)
NAVPERSCOM (PERS-4, PERS-404)

Director of Naval Training ..... CNO (N00T)

D. SYSTEM DESCRIPTION

1. Operational Uses. The OASIS will be deployed from the MH-60S helicopter or surface craft. The OASIS system will be used for high-speed, magnetic, acoustic, and magnetic/acoustic influence minesweeping in waters with a suspected mine threat. The magnetic/acoustic influence minesweeping capability will be combined in a single Towed Body. OASIS will satisfy the U.S. Navy's need for rapid, wide area coverage mine clearance capability

required to neutralize magnetic, acoustic, and magnetic/acoustic influence mines. OASIS will target magnetic, acoustic, and magnetic/acoustic combination mine types only. Refer to the Mission Need Statement for Mine Countermeasures, M042-85-93, dated 01 October 1993.

The OASIS is one of five Airborne Mine Countermeasures (AMCM) sensor/weapon systems being developed for deployment aboard the MH-60S aircraft. The additional sensor/weapon systems are the Airborne Laser Mine Detection System (ALMDS), AN/AQS-20A Sonar Mine Detecting Set, Rapid Airborne Mine Clearance System (RAMICS), and the Airborne Mine Neutralization System (AMNS). Individual NTSPs are in development for each of these systems.

2. Foreign Military Sales. No Foreign Military Sales are planned.

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST. OASIS Developmental Test (DT) and Developmental Test and Evaluation (DT&E) is structured into two phases, DT-IIA and DT-IIB designed to monitor and validate the progress of System Development and Demonstration (SD&D), and minimize risk reduction.

The first phase DT-IIA will examine basic OASIS issues including system integration with the MH-60S helicopter, subsystem packaging to meet size and weight restrictions, and available power distribution requirements necessary to effectively power OASIS.

The second phase, DT-IIB Technical Evaluation (TECHEVAL) will focus primarily on the ability of the OASIS system to satisfy performance and effectiveness parameters specified in the OASIS Operational Requirements Document.

Operational Evaluation (OPEVAL) will consist of one phase, Operational Test Two (OT-II). OPEVAL will be conducted on two production representative OASIS and will assess OASIS operational effectiveness and operational suitability. OPEVAL will support tactics development and a recommendation regarding Fleet introduction.

Follow-on Operational Test and Evaluation, OT-III and OT-IV as required will be conducted to verify correction of deficiencies, to complete deferred or incomplete OPEVAL requirements, to continue tactics development, and to verify the operational effectiveness and suitability of a production model OASIS. TECHEVAL is planned for first quarter Fiscal Year (FY) 05. OPEVAL is planned for third quarter FY05. For detailed DT and OT information refer to the Draft OASIS Test and Evaluation Master Plan, dated April 2000. No DT&E has been completed to date.

F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED. The OASIS will not replace any existing equipment or system.

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description. The OASIS will be deployed from the MH-60S helicopter or surface craft and will be used for high-speed magnetic, acoustic, and magnetic/acoustic influence minesweeping in waters with a suspected mine threat. The magnetic/acoustic influence minesweeping capability will be combined in a single Towed Body. The Towed Body provides a stable tow platform for influence minesweeping operations. The Towed Body consists of the magnetic and acoustic subsystems and mechanical assemblies required to enable OASIS to meet its system level performance requirements. The Towed Body is made up of three units: the Nose Assembly; the Mid-Body Assembly; and the Tail Cone Assembly. Details of each are provided below:

a. Nose Assembly. The water-tight Nose Assembly contains the control/monitoring electronics required for leak detection, depth sensing, wing control, magnetic and acoustic output confirmation, and data interface with the Common Console (CC). Also contained in the Nose Assembly is a power inverter, which converts aircraft alternating current (ac) power to direct current (dc) power for the electronics, magnetic sweep output, and Towed Body winch operation. All electronic components are mounted on vibration isolation pads to ensure component integrity. The attaching hardware design of the nose assembly to the mid-body assembly allows for ease of removal/re-assembly by maintenance personnel.

b. Mid-Body Assembly. The Mid-Body assembly contains the wing assembly and actuator mechanism and most of the components that allow for the storage, deployment and retrieval of the sweep cable/aft electrode. Also contained in this assembly is a slip ring that distributes electrical current from the power inverter in the nose assembly to the sweep cable/aft electrode. Within the Mid-Body is a winch assembly that accommodates 400 feet of one-quarter inch braided copper sweep cable/aft electrode. The winch assembly's motor powers the deployment and retrieval of the sweep cable/aft electrode at the rate of 133 feet per minute. Control is accomplished at the CC by the Console Operator. A level-wind mechanism, head guides, capstans, and guide rods allow for smooth cable deployment and retrieval. To provide for ease of corrective and preventive maintenance in this assembly, the upper shell of this assembly can be easily removed. The Mid-Body assembly is open to the water and is free-flooded.

c. Tail Cone Assembly. The Tail Cone assembly contains two cavitation devices that are mounted to the sides of the assembly. These devices are based on proven MK-104 acoustic generator design. Four tail fins located on the tail cone assembly provide stabilization for the Towed Body. A locator beacon (transponder) is located in this section to facilitate recovery of a lost Towed Body. Retrieval and deployment of the sweep cable by the winch assembly in the Mid-Body assembly is facilitated by a flared entry-exit cable guide located in this assembly. The attaching hardware design allows for ease of assembly/disassembly of this assembly from the Mid-Body assembly. The Tail-Cone assembly is open to the surrounding water and is free-flooded.

Note: The OASIS will be integrated into the MH-60S through the use of the aircraft AMCM mission kit, consisting of the CC, Carriage, Stream, Tow, and Recovery System (CSTRS), and Tow Cable. Currently, the Tow Cable that will be used for OASIS is the AN/AQS-20A Tow Cable. This dual usage (OASIS and AN/AQS-20A) provides for commonality between the two

systems. The existing AN/AQS-20A Tow Cable will be modified to allow it to perform as the forward electrode for OASIS. This modification will consist of replacing the current lower 100 feet of plastic hydrodynamic fairings with conductive aluminum material fairings. The Tow Cable is 850 feet in length and provides towing strength between the aircraft and the towed body, and provides for fiber optics and electrical connectivity.

2. Physical Description. The Towed Body will be attached to the aircraft by the CSTRS. The CSTRS is currently being designed to the specifications of the AN/AQS-20A Towed Body, and it is desirable that the OASIS Towed Body should meet these requirements. The OASIS Towed Body will be similar to the physical dimensions of the AN/AQS-20A Towed Body and will not exceed 950 pounds in air weight. The Contractor, subject to Government approval, may vary the diameter of the Towed Body. A detailed physical description will be identified in a future update of this NTSP.

3. New Development Introduction. The OASIS will be introduced as new production.

4. Significant Interfaces. No modifications to the MH-60S aircraft will be required to install OASIS, and the incorporation of the system onto the aircraft shall not degrade the aircraft dynamic performance. The OASIS and its computer resources will interface electrically and will be compatible with the following:

a. MH-60S helicopter

b. Aircraft AMCM Mission Kit

Note: Detailed information can be found in the Draft OASIS Interface Requirements Document, dated 15 May 2000.

5. New Features, Configurations, or Material. NA.

H. CONCEPTS

1. Operational Concept. The OASIS will provide an Organic Airborne Mine Countermeasures capability to the Carrier Battle Group (CVBG) and Amphibious Ready Group (ARG) and provide an improved high-speed magnetic, acoustic, and magnetic/acoustic influence minesweeping capability to the dedicated AMCM Forces. This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Operating Area whenever time available for mine clearance is limited or when conditions do not favor mine-hunting. The OASIS concept will combine a high tow speed, strong magnetic field, and an acoustic source in a single Towed Body that will significantly increase area coverage rate capability over the existing AN/SPU-1W Magnetic Orange Pipe and prototype Shallow Water Influence Minesweep System. The OASIS magnetic subsystem will have the ability to be magnetized and demagnetized on demand, allowing OASIS to be stowed in contact with the MH-60S during transit to and from the operations area. This allows for short transit times, long-range standoff, and more available sweep time as required for over-the-horizon operations.

Upon reaching the operations area, OASIS will be deployed from the MH-60S helicopter by a tow cable with an estimated stream time of approximately ten minutes. Once deployed, the magnetic influence system can be set to the previously determined tactically appropriate level. The acoustic subsystem is comprised of two modified MK-104 acoustic devices. These mechanical devices produce an acoustic signature as OASIS is towed through the water.

Mission planning will be completed before takeoff using the Mine Warfare Environmental Decision Aid Library (MEDAL) or appropriate planning tools. Magnetic and acoustic equipment status information will be provided to the operator in the helicopter during the mission.

2. Maintenance Concept. The maintenance concept for the OASIS will be based on the three levels of maintenance, Organizational Level (O-Level), Intermediate Level (I-Level), and Depot Level (D-Level) as stated in the Naval Aviation Maintenance Program (NAMP), Office of the Chief of Naval Operations Instruction (OPNAVINST) 4790.2H. A Level of Repair Analysis (LORA) will determine the exact level of maintenance for repairable items. The LORA will be conducted during the SD&D phase. Description for each level of maintenance is as follows:

a. Organizational. O-Level maintenance will be performed in the work center or on the flight line. O-Level maintenance is limited to aircraft mission configuration, pre and post mission equipment inspections/certifications, cleaning and corrosion control, minor flight line repairs, and troubleshooting using Built-In Test (BIT) to the Weapon Replaceable Assembly (WRA) level. It is expected that Aviation Electronics Technicians (AT) with a new Navy Enlisted Classification (NEC) code 83XX, MH-60S Airborne Mine Countermeasures Systems Maintenance Technicians Organizational and Intermediate Level will be assigned to Helicopter Combat Support (HC) and Helicopter Mine Countermeasures (HM) squadrons and will perform O-Level and I-Level maintenance on the OASIS. Additionally they will be trained to perform O-Level and I-Level maintenance as required on all the MH-60S AMCM systems. These billets do not currently exist in the HC squadrons and will have to be established. Aviation Ordnancemen (AO) NEC code 8378 will perform aircraft mission configuration and certification. AO maintenance billets do not currently exist in the HC squadrons and will have to be established. Additionally ATs NEC code 83XX, MH-60S AMCM Systems Maintenance Technicians Organizational and Intermediate Level will be assigned to Work Center (W/C) 230 to provide maintenance support for the OASIS when installed and while in their custody. This maintenance concept is supported by the AMCM mission systems maintenance program outlined in the NAMP, OPNAVINST 4790.2H.

(1) Preventive Maintenance. Preventive Maintenance at the O-Level normally occurs between missions and includes limited scheduled maintenance consisting of pre and post-mission inspections, operational readiness testing, and corrosion control. Post-mission system corrosion control includes freshwater wash down, inspection, and cleaning of the Towed Body and inspection and cleaning of all associated WRAs.

(2) Corrective Maintenance. Corrective maintenance actions at the O-Level will include fault isolation to the WRA level, using Power-Up BIT, Operator Initiated BIT, or manual troubleshooting methods, removal and replacement of faulty WRAs, and

verification of satisfactory corrective maintenance actions, and adjustment or alignment as required and as authorized at the O-Level.

b. Intermediate. I-Level maintenance will be performed on all WRAs and Shop Replaceable Assemblies (SRA) beyond the O-Level maintenance capability. I-Level maintenance consists of fault isolation of defective WRAs and SRA by using Common Support Equipment (CSE) and Peculiar Support Equipment (PSE), replacing faulty SRA and components, and verifying corrective action via the appropriate CSE and PSE. When deployed away from supporting Aircraft Intermediate Maintenance Departments (AIMD) I-Level trained squadron maintenance personnel will perform OASIS system I-Level maintenance. I-Level Test Equipment (ILTE) is expected to be small and lightweight to facilitate portability. The squadrons and supporting AIMDs will be outfitted with the necessary CSE, PSE, repair parts and consumables to support authorized maintenance. Detailed information on AIMD locations, CSE, and PSE will be identified in the next iteration of this NTSP.

Note: It is expected that O-Level and I-Level trained ATs NEC 83XX will be assigned to MH-60S squadrons and supporting AIMDs as MH-60S AMCM systems maintenance technicians to provide OASIS O-Level and I-Level maintenance support.

c. Depot. D-Level maintenance support for the OASIS will involve repair and overhaul of sophisticated electronics requiring specialized facilities and specially trained personnel. The depot will receive faulty WRAs and SRA from the I-Level and in some cases the O-Level maintenance activity and will replace or repair assemblies and components as necessary. D-Level maintenance will be accomplished under contract by the Original Equipment Manufacturer or other qualified vendor. Systems and assemblies will be returned to the depot for repairs in accordance with the maintenance plan.

d. Interim Maintenance. It is anticipated factory technical representatives will provide interim maintenance until Navy technicians are fully trained to perform O-Level and I-Level maintenance.

e. Life-Cycle Maintenance Plan. The service life of the OASIS is limited by component deterioration. Maintenance requirements and component life cycle data is based on data obtained from the supportability analysis, Reliability Centered Maintenance and LORA results. All life cycle data from testing will be compiled and preventive maintenance requirements designed to extend the life cycle will be provided prior to Fleet introduction.

3. Manning Concept. Based on an analysis of the operator, maintenance, and tactics related tasks associated with the OASIS and its supporting equipment, it has been determined these tasks will be within the capabilities of the Navy's existing enlisted rating and Navy Officer Billet Classification structures. Based on current program information it is anticipated introduction of the OASIS will require no additional operator billets above those identified in current HC and HM Activity Manpower Documents. Based on the results of a base line comparison conducted during the development of this NTSP utilizing current AMCM systems maintenance support information, it is expected that additional O-Level and I-Level maintenance billets may be required within the HC squadrons and AIMDs to support maintenance

requirements of the OASIS and additional MH-60S AMCM systems. It is expected that existing AT NEC 8391 maintenance billets will convert to MH-60S AMCM systems maintenance support billets when the HM squadrons transition to the MH-60S and its associated AMCM systems. Additional instructor billets may be required to support OASIS training requirements. This will not be determined until detailed training and student throughput information becomes available. Actual manpower requirements will not be available until a Manpower Estimate Report (MER) for the MH-60S squadrons supporting AMCM becomes available.

Note: A MER is currently under development by Commander Naval Air Systems Command (Code AIR 3.2.6) Patuxent River, Maryland. Results of the MER will be identified in future updates of this NTSP.

a. Estimated Maintenance Man-Hours per Operating Hour. Estimated Maintenance Man-Hours per Operating Hour for each affected Work Center will be identified from the development of the MER. Once complete, the results will be identified in an update to this NTSP.

b. Proposed Utilization. Average sortie length is expected to be approximately two hours and 30 minutes. System utilization has currently not been identified.

c. Recommended Qualitative and Quantitative Manpower Requirements. Based on the MH-60S NTSP N88-NTSP-A-50-9902A/A, current OASIS program information, and baseline comparisons conducted it is expected the OASIS will not require additional operator billets. New O-Level AO, NEC code 8378 and O-Level and I-Level AT, NEC code 83XX maintenance billets may be required.

(1) Operator. Refer to the MH-60S NTSP N88-NTSP-A-50-9902A/A.

(2) Maintenance. It is expected that new maintenance billets may be required to support O-Level and I-Level maintenance requirements for the OASIS. These O-Level and I-Level ATs will be assigned to the squadrons and supporting AIMDs specifically trained to support both the O-Level and I-Level maintenance requirements for all the MH-60S AMCM systems. It is anticipated that they will be identified as MH-60S AMCM Systems Maintenance Technician Organizational and Intermediate Level, NEC code 83XX. Additionally, AOs NEC code 8378 will perform aircraft mission configuration and certification. AO maintenance billets currently do not exist in the deployable HC squadrons. These billets will have to be established. This maintenance-manning concept is supported by the NAMP, OPNAVINST 4790.2H. Detailed maintenance manpower information is currently not available. The tables below detail current and proposed qualitative manning information.

Note: The O-Level AOs may be assigned to the CVBG MH-60s squadrons as a result of the Combat Search and Rescue (Armed Helo) requirement. Refer to the H-60 Armed Helicopter NTSP N88-NTSP-A-50-9805/A.

HM AMCM SYSTEMS MAINTENANCE SUPPORT					
CURRENT MH-53E			PROPOSED MH-60S		
RATE	**NEC**	**W/C**	**RATE**	**NEC**	**W/C**
AD	8391	16A	AO	8378	230
AE	8391	16B	AT	83XX	230/16B
AM	8391	230/16A			
AO	0000	230			
AT	8391	16B			

HC AMCM SYSTEMS MAINTENANCE SUPPORT					
CURRENT H-46			PROPOSED MH-60S		
RATE	**NEC**	**W/C**	**RATE**	**NEC**	**W/C**
NA			AO	8378	230
NA			AT	83XX	210

Note: With the current and future development of MH-60S deployable AMCM systems, the need for a specific NEC code identifying those personnel trained and qualified to maintain these systems will be required. Currently the HM community utilizes NEC code 8391; AMCM Systems Maintenance Technician Organizational and Intermediate Level to identify personnel trained to maintain AMCM systems and mission equipment. These personnel support both O-Level and I-Level maintenance requirements.

(3) Tactics. Operations Specialists (OS) are assigned to and conduct AMCM Mission Planning and Post Mission Analysis and operate AMCM Command, Control, Communications, Computers, and Intelligence (C4I) systems for the HM squadrons. It is expected that this manning concept will not change. Currently these OSs receive no AMCM specific follow-on training or NEC. A Stand-Alone course titled Airborne Mine Countermeasures MCM Planning, Post Mission Analysis, MCM Evaluation Course is currently proposed in the AN/AQS-20A Initial NTSP. Additionally, an On-the-Job Training (OJT) awardable NEC code 03XX, AMCM Operations Specialist that will identify their AMCM specific qualifications is planned. This Stand-Alone course along with the OJT will ensure these personnel receive the training and skills necessary to meet the commands operational commitments. Personnel requirements for conducting Mission Planning, Post Mission Analysis, and the operation of AMCM C4I systems for the HC squadrons are currently being evaluated. HC and HM operators (pilots and aircrewmen) will receive AMCM mission tactics training from a segment course within the operator track.

4. Training Concept. The OASIS training program will consist of initial and follow-on training for TECHEVAL and OPEVAL personnel, instructors, Fleet operators, maintenance technicians, and tactics personnel. Initial training for TECHEVAL and OPEVAL personnel, instructors, Fleet operators, and maintenance technicians will be accomplished by both government and contractor support. Follow-on training for operators (pilots and aircrewmen) will be conducted at the MH-60S Fleet Replacement Squadrons (FRS), HC-3 Naval Air Station (NAS) North Island, California and HC-2 Naval Station (NS) Norfolk, Virginia. Follow-on maintenance training for mission configuration personnel (AOs) will be conducted at Maintenance Training Unit (MTU) -1044, NS Norfolk and MTU-1022, NAS North Island. Follow-on OASIS maintenance training for the AMCM systems technicians (ATs) will be conducted at MTU-1044, NS Norfolk and MTU 1022, NAS North Island. Training for HM tactics (Mission Planning/Post Mission Analysis) personnel will be provided through a Stand-Alone course at a location and activity To Be Determined (TBD). Tactics training and locations for HC squadron (Mission Planning/Post Mission Analysis) personnel is currently under review. The follow-on training system that will be delivered to the training activities will be developed under contract as Computer Based Training (CBT) in the format required by the training activities.

a. Initial Training. The Contractor will develop and conduct operator and maintenance initial training for Navy Test and Evaluation personnel in support of TECHEVAL and OPEVAL. In order to meet Fleet introduction requirements, the Contractor will also develop and conduct operator and maintenance initial training for the FRS and Naval Air Maintenance Training Unit (NAMTRAU) instructors, and an initial cadre of Fleet operator, maintenance, and tactics (Mission Planning/Post Mission Analysis) personnel. It is expected that the following courses will be required.

Note: Initial training requirements for tactics personnel are currently under review.

(1) Pre-TECHEVAL and OPEVAL.

Title	**OASIS Pre-TECHEVAL and OPEVAL Training Courses**
Description.....	Provides familiarization training to selected personnel to sufficiently prepare for and support TECHEVAL and OPEVAL. This will include controls and indications, aircraft rigging/de-rigging, certification procedures, aircrew launch and recovery procedures, console operating procedures, safety/emergency procedures, and system tactics.
Location	Naval Surface Warfare Center Coastal Systems Station Panama City, Florida

Length.....	TECHEVAL: 20 Days OPEVAL: 41 Days
RFT date	TECHEVAL: November 04 OPEVAL: April 05
TTE/TD.....	OASIS System, CSTRS, MH-60S
Prerequisites.....	Selected Government and Navy personnel in support of TECHEVAL and OPEVAL

(2) Operator. Instructors and initial cadre Fleet personnel.

Title	**Organic Airborne And Surface Influence Sweep Operation and Tactics Initial Training (Pilot)**
Description.....	Provides instructors and an initial cadre of Fleet pilots the basic skills, tactics and techniques necessary to employ the OASIS.
Location	TBD
Length.....	TBD
RFT date	December 06
TTE/TD.....	TBD
Prerequisites.....	Pilot qualified in the MH-60S helicopter

Title	**Organic Airborne And Surface Influence Sweep Operator Initial Training**
Description.....	Provides instructors and an initial cadre of Fleet aircrewmen the basic skills necessary to stream, operate, and recover the OASIS.
Location	TBD
Length.....	TBD
RFT date	December 06
TTE/TD.....	TBD
Prerequisites.....	Aircrewman qualified in the MH-60S helicopter, APO 8205

(3) Tactics. Instructors and initial cadre Fleet personnel.

Title.....	**Organic Airborne And Surface Influence Sweep Tactics, Mission Planning and Post Mission Analysis Initial Training**
Description.....	Provides instructors and an initial cadre of tactics personnel the training necessary to properly plan mission requirements and conduct post mission analysis for the OASIS.
Location.....	TBD
Length.....	TBD
RFT date.....	December 06
TTE/TD.....	TBD
Prerequisites.....	Fleet AMCM Tactics personnel

(4) Maintenance. Instructors and initial cadre Fleet personnel.

Title.....	**Organic Airborne And Surface Influence Sweep Electronic Systems Organizational and Intermediate Level Maintenance Initial Training**
Description.....	Provides instructors and an initial cadre of Fleet personnel the skills, knowledge, and techniques required to perform O-Level and I-Level maintenance and test procedures on electronic components of the OASIS.
Location.....	TBD
Length.....	TBD
RFT date.....	December 06
TTE/TD.....	OASIS System, ILTE
Prerequisites.....	AT 83XX

Title.....	**Organic Airborne And Surface Influence Sweep Aircraft Configuration Initial Training**
Description.....	Provides instructors and an initial cadre of Fleet maintenance personnel with the skills, knowledge, and techniques required to properly configure the aircraft and operate BIT equipment for the OASIS mission.

Location.....	TBD
Length.....	TBD
RFT date.....	December 06
TTE/TD.....	OASIS, CC, CSTRS, MH-60S
Prerequisites.....	AO 8378, AT 83XX

b. Follow-on Training. Follow-on training for operators (pilots and aircrewmen) will be conducted at the MH-60S FRS HC-3 NAS North Island and HC-2 NS Norfolk. Follow-on training for maintenance personnel will be conducted at MTU-1044, NS Norfolk and MTU-1022, NAS North Island. Training for HM tactics (Mission Planning/Post Mission Analysis) personnel will be provided through a Stand-Alone course at a location and activity TBD. Tactics training and locations for HC squadron (Mission Planning/Post Mission Analysis) personnel is currently under review. The following are proposed courses:

(1) Operator.

Title	**Organic Airborne And Surface Influence Sweep Operator**
CIN	C-050-XXX1 (Pipeline E-050-3100, E-050-3102)
Model Manager ...	HC-3, NAS North Island, California
Description	This course provides MH-60S aircrewmen the basic skills necessary to operate the OASIS.
Location	HC-2, NS Norfolk, Virginia HC-3, NAS North Island, California
Length	TBD
RFT date	HC-2 - TBD HC-3 – April 07
Skill identifier	APO NEC 8205
TTE/TD	TBD
Prerequisites	Q-050-1500, Naval Aircrew Candidate School Q-050-0600, Aviation Rescue Swimmer School E-050-3101, MH-60S Category I MMH Aircrewman D/E-2D-0039, Survival, Evasion, Resistance, and Escape

(2) Maintenance.

Title.....	**Organic Airborne And Surface Influence Sweep Electronic Systems Organizational and Intermediate Level Maintenance**
CIN.....	C-102-XXX2 (Pipeline D/E-102-XXX1, Currently proposed in the AN/AQS-20A Initial NTSP)
Model Manager....	TBD
Description.....	Provides ATs with the skills, knowledge, and techniques required to perform aircraft configuration, O-Level and I-Level maintenance, and test procedures on the OASIS. Upon completion, the technician will be capable of configuring the aircraft, performing O-Level and I-Level maintenance, and operate BIT for the OASIS under limited supervision.
Location.....	MTU-1022, NAS North Island, California MTU-1044, NS Norfolk, Virginia
Length.....	TBD
RFT date.....	April 07
Skill identifier.....	AT 83XX
TTE/TD.....	TBD
Prerequisite.....	C-100-2020, Avionics Common Core Class A1 C-100-2018, Avionics Technician O-Level Class A1 or C-100-2017, Avionics Technician I-Level Class A1

c. Student Profiles.

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
1311	Q-2A-0001, Primary Flight Training Q-2A-0010, Joint T-34C/T-6A Joint Primary Aircraft Training System (JPATS) Intermediate Flight Training Q-2A-0015, Undergraduate Helicopter Pilot Training D/E-2D-0039, Survival, Evasion, Resistance, and Escape Training J-495-0413, Shipboard Aircraft Firefighting
AO 8378	C-646-2011, Aviation Ordnanceman Common Core Class A1 C-646-2012, Aviation Ordnanceman Airwing Strand Class A1
AT 83XX	C-100-2020, Avionics Common Core Class A1 C-100-2018, Avionics Technician O-Level Class A1, and or C-100-2017, Avionics Technician I Level Class A1
APO 8205	Q-050-1500, Naval Aircrewman Candidate School Q-050-0600, Aviation Rescue Swimmer School D/E-2D-0039, Survival, Evasion, Resistance, and Escape
OS 03XX	J-221-0011, Operations Specialist Class A1

d. Training Pipelines. The following identifies proposed track and course impacts as a result of the addition of OASIS operator, maintenance, and tactics training. Due to this being new development training the extent of impact to existing and planned training tracks is unknown at this time. Two new NEC codes are proposed, AT 83XX, MH-60S AMCM Systems Maintenance Technician Organizational and Intermediate Level and OS 03XX, AMCM Operations Specialist. Details of the individual training tracks, courses, and revisions to the existing training tracks are listed in Appendix B.

(1) E-2C-3100, MH-60S Fleet Replacement Pilot Category I Pipeline

(2) E-2C-3102, MH-60S Fleet Replacement Pilot Category II Pipeline

(3) E-050-3100, MH-60S Fleet Replacement Aircrew Category I Pipeline

(4) E-050-3102, Fleet Replacement Aircrewman Category II Pipeline

(5) **C-102-XX03,** Airborne Mine Countermeasures MCM Planning, Post Mission Analysis, MCM Evaluation Course. Proposed in the AN/AQS-20A Initial NTSP. Stand-Alone.

(6) **D/E-102-XXX1,** MH-60S AMCM Systems Organizational and Intermediate Maintenance. Proposed in the AN/AQS-20A Initial NTSP.

(7) **D/E-646-0840,** H-60 Armament and Related Systems Organizational Maintenance Track

I. ONBOARD (IN-SERVICE) TRAINING.

1. Proficiency or Other Training Organic to the New Development.

a. Maintenance Training Improvement Program. Current planning is to adopt the Aviation Maintenance Training Continuum System (AMTCS) concepts to replace the Maintenance Training Improvement Program (MTIP). AMTCS is scheduled to begin full implementation for fleet deployment in November 2003.

b. Aviation Maintenance Training Continuum System. The AMTCS will provide career path training to the Sailor or Marine from their initial service entry to the end of their military career. AMTCS concepts will provide an integrated system that will satisfy the training and administrative requirements of both the individual and the organization. The benefits will be manifested in the increased effectiveness of the technicians and the increased efficiencies of the management of the training business process. Where appropriate, capitalizing on technological advances and integrating systems and processes can provide the right amount of training at the right time, thus meeting the Chief of Naval Operation (CNO) mandated "just-in-time" training approach.

Technology investments enable the development of several state-of-the-art training and administrative tools: Interactive Multimedia Instruction for the technicians in the Fleet in the form of Interactive Courseware (ICW) with Computer Managed Instruction and Computer Aided Instruction for the schoolhouse.

Included in the AMTCS development effort is the Aviation Maintenance Training Continuum System - Software Module, which provides testing [Test and Evaluation], recording [Electronic Certification Qualification Records], and a Feedback system. The core functionality of these AMTCS tools are based and designed around the actual maintenance-related tasks the technicians perform, and the tasks are stored and maintained in a Master Task List data bank. These tools are procured and fielded with appropriate Commercial-Off-The-Shelf hardware and software, i.e., Fleet Training Devices - Laptops, PCs, Electronic Classrooms, Learning Resource Centers, operating software, and network software and hardware.

Upon receipt of direction from OPNAV (N789H), AMTCS concepts are to be implemented and the new tools integrated into the daily training environment of all participating aviation activities and supporting elements. AMTCS will serve as the standard training system for aviation maintenance training within the Navy and Marine Corps, and is planned to supersede the existing Maintenance Training Improvement Program and Maintenance Training Management and Evaluation Program programs.

It is expected that OASIS training will encompass the requirements of AMTCS.

2. Personnel Qualification Standards. Currently no formal Personnel Qualification Standards are planned for the OASIS.

3. Other Onboard or In-Service Training Packages. On-Board training in the form of portable Computer Based Training/ICW will be developed to provide operators a mission skill development capability and a means to maintain proficiency operating the OASIS system. This is an invaluable tool for those aircrews that may experience extended periods between mission flights. Similar proficiency support training will also be developed for maintenance and tactics (Mission Planning/Post Mission Analysis) personnel. On-the-Job Training will be available at the Fleet level. Detailed information on this training will be identified in a future update to this NTSP.

J. LOGISTICS SUPPORT

1. Manufacturer and Contract Numbers.

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N-00024-02-C-6316	EDO Marine and Aircraft Systems	1500 New Horizons Blvd. N. Amityville, N.Y. 11701

2. Program Documentation. The Draft OASIS Acquisition Logistics Support Plan (ALSP) has been completed and is currently available. The ALSP will be the primary document used to define program support requirements, specify milestones, and identify ALSP responsibilities throughout the system's life cycle.

3. Technical Data Plan. The OASIS technical publications will be produced, distributed, and supported in an Interactive Electronic Technical Manual (IETM) format, including software and hardware support. The OASIS publications will support operation, training, maintenance, and Depot repair of the system, or subsystems. The IETMs will be developed in accordance with the Technical Manual Contract Requirements 01-007 dated October 2002.

4. Test Sets, Tools, and Test Equipment. Requirements for special test sets, tools, test equipment and general-purpose test equipment will be identified during the SD&D phase.

Further requirements will be addressed during the Task Analysis. The required equipment will be available to support Initial Operational Capability (IOC).

5. Repair Parts. An IOC analysis will be conducted to determine the range and depth of spares and materials required to support the OASIS equipment. The analysis will be based on the support concept identified through the maintenance planning effort using the results of the LORA.

The determination of spares will include the requirements to support integration and test, installation and checkout, Operational Assessment, O-Level, I-Level, and D-Level maintenance.

Identification of spares and material requirements will be performed by a combination of engineering assessment and spares modeling techniques.

Engineering assessment will be particularly useful to identify support material requirements for integration and test activities. The Material Support Date will be identified in a future update of this NTSP.

6. Human Systems Integration. The Human Systems Integration (HSI) Plan establishes the basis for effective integration of human factors engineering, manpower, personnel, training, health hazards, and safety considerations into the acquisition of the new development as outlined in the Department Of Defense Instruction 5000.2. Upon the Engineering Development Model contract award the prime contractor will develop a System Engineering Management Plan that will contain the HSI Plan.

K. SCHEDULES.

1. Installation and Delivery Schedules. The information in the table below identifies the number of SD&D and production systems projected for delivery up to FY08. Specific squadron delivery schedules are currently not available.

DELIVERY SCHEDULE

FY04	FY05	FY06	FY07	FY08
03	00	03	03	13

2. Ready For Operational Use Schedule. The OASIS will be Ready For Operational Use (RFOU) upon delivery to the squadron.

3. Time Required to Install at Operational Sites. The OASIS system will be delivered RFOU, but will not be permanently installed in the aircraft. Installation of the OASIS system on the MH-60S helicopter will be an O-Level maintenance function having a threshold of four hours and an objective of two hours to complete. Removal times for the system will be no greater than the installation time noted above.

4. Foreign Military Sales and Other Source Delivery Schedule. NA.

5. Training Device and Technical Training Equipment Delivery Schedule. Although detailed information on Training Devices (TD) and Technical Training Equipment (TTE) is currently under development, it is expected the following TDs and TTE will be required.

(a) Operator:

DEVICE	DATE REQUIRED
CC	April FY07
Towed Body (Dummy) with Tow Cable	April FY07
CSTRS	April FY07
Stream/Recovery Trainer	April FY07

(b) Maintenance:

DEVICE	DATE REQUIRED
CC	April FY07
Towed Body (Task Trainer)	April FY07
ILTE	April FY07
CSTRS	April FY07
Aircraft Configuration Trainer	April FY07

(c) Tactics:

DEVICE	DATE REQUIRED
MEDAL	April FY07
Navy H60 Mission Planning Station	April FY07

L. GOVERNMENT-FURNISHED EQUIPMENT AND CONTRACTOR-FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA.

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
OASIS Test And Evaluation Master Plan	TEMP XX-XXX	PMS210	Draft April 2000
Interface Requirements Document For OASIS	NA	PMS210	Draft May 2000
Prime Item Development Specification (PIDS) For OASIS	PIDS XX-XXX	PMS210	Draft May 2000

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
OASIS, Acquisition Logistics Support Plan	ALSP XX-XXX	PMS210	Draft June 2000
CVBG/ARG MIW CONOPS	NA	CINCLANT CINCPAC	Draft Jul 2001
H-60 Armed Helicopter Program NTSP	N88-NTSP-A-50-9805/A	PMA299	Approved Mar 2002
Operational Requirements Document for an AMCM Multi-Mission HC Helicopter	Annex B (Revision 1)	CNO N752E	Approved Aug 2002
MH-60S NTSP	N88-NTSP-A-50-9902A/A	PMA299	Approved Jan 2003
AN/AQS-20A Initial NTSP	N75-NTSP-P-30-0305/I	PMS210	Initial Sep 2003

APPENDIX A - POINTS OF CONTACT

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Appendix B to the OASIS NTSP identifies the proposed establishment of new training tracks, training courses, and revisions to existing tracks. Due to this being new development training the extent of impact to existing and planned training tracks is unknown at this time. Ready For Training (RFT) dates below have been estimated based on current program information.

Note: Dual site training for the AMCM systems maintenance technicians, as identified in this NTSP, is anticipated. Currently, training site throughput has not been determined. It is expected, the MER, once complete, will provide the information needed for developing the throughput numbers used to determine if dual site training is required.

1. E-2C-3100, MH-60S Fleet Replacement Pilot Category I Pipeline. The course identified below is currently proposed in the AN/AQS-20A Initial NTSP. Proposed revision:

(a) Revise **D/E-2C-XXX1**, MH-60S Pilot Airborne Mine Countermeasures Systems Familiarization and Operational Flight Trainer/Weapons Tactical Trainer. Add OASIS training information. Change to course length is TBD. Course currently proposed with a planned establishment at HC-3, NAS North Island and HC-2, NS Norfolk. HC-3 RFT date is April 2007. HC-2 RFT date is TBD.

(b) Change to Category I track lengths is TBD.

2. E-2C-3102, MH-60S Fleet Replacement Pilot Category II Pipeline. The course identified below is currently proposed in the AN/AQS-20A Initial NTSP. Proposed revision:

(a) Revise **D/E-2C-XXX1**, MH-60S Pilot Airborne Mine Countermeasures Systems Familiarization and Operational Flight Trainer/Weapons Tactical Trainer. Add OASIS training information. Change to course length is TBD. Course currently proposed with a planned establishment at HC-3, NAS North Island and HC-2, NS Norfolk. HC-3 RFT date is April 2007. HC-2 RFT date is TBD.

(b) Change to Category II track length is TBD.

3. E-050-3100, MH-60S Fleet Replacement Aircrew Category I Pipeline. Proposed revision:

(a) Add **C-050-XXX1**, Organic Airborne and Surface Influence Sweep Operator. Course length is TBD. Establish this course at HC-3, NAS North Island and HC-2, NS Norfolk. HC-3 RFT date is April 2007. HC-2 RFT date is TBD.

(b) Change to Category I track length is TBD.

4. E-050-3102, MH-60S Fleet Replacement Aircrewman Category II Pipeline. Proposed revision:

(a) Add **C-050-XXX1**, Organic Airborne and Surface Influence Sweep Operator. Course length is TBD. Establish this course at HC-3, NAS North Island and HC-2, NS Norfolk. HC-3 RFT date is April 2007. HC-2 RFT date is TBD.

(b) Change to Category II track length is TBD.

5. D/E-102-XXX1, MH-60S AMCM Systems Organizational and Intermediate Maintenance. This track is currently proposed in the AN/AQS-20A Initial NTSP. Proposed revision:

(a) Add **C-102-XXX2**, Organic Airborne and Surface Influence Sweep Electronic Systems Organizational and Intermediate Level Maintenance. Course length is TBD. Establish this course at MTU-1022, NAS North Island and MTU-1044, NS Norfolk. MTU-1022 RFT date is April 2007. MTU-1044 RFT date is TBD.

(b) Change to track length is TBD.

6. C-102-XXX3, Airborne Mine Countermeasures MCM Planning, Post Mission Analysis, MCM Evaluation Course. This course is currently proposed in the AN/AQS-20A Initial NTSP. Training for squadron tactics personnel will be resident in a Stand-Alone course. A new OJT awardable NEC code 03XX, AMCM Operations Specialist will be established. This NEC will be awarded after successful completion of the Stand-Alone course and approximately six months of OJT at the squadron. No training track required. Proposed revision:

(a) Revise, **C-102-XXX3**, Airborne Mine Countermeasures MCM Planning, Post Mission Analysis, MCM Evaluation. Add OASIS training information. Change to course length is TBD. Training location TBD. RFT date is April 2007.

7. D/E-646-0840, H-60 Armament and Related Systems Organizational Maintenance Track. The course below is currently proposed in the AN/AQS-20A Initial NTSP. Proposed revision:

(a) Revise **C-646-XXX4**, MH-60S AMCM Weapon Systems Mission Configuration. Add OASIS training information. Change to course length is TBD. Course currently proposed with a planned establishment at MTU 1022, NAS North Island, and MTU-1044, NS Norfolk. MTU-1022 RFT date is April 2007. MTU-1044 RFT date is TBD.

(b) Change to track length is TBD.